

REMARKS

Claims 1 – 21 are now pending in the application. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claims 1 – 8 and 17 – 21 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Geyer (U.S. Pat. No. 6,378,515). This rejection is respectfully traversed.

Claim 1 has been amended to include a controller that determines an expected oxides of nitrogen level based on a desired air per cylinder (APC) and that adjusts the valve if a difference between the expected oxides of nitrogen level and the oxides of nitrogen level is not within a threshold. Geyer fails to teach or suggest a controller that determines an expected oxides of nitrogen level based on a desired air per cylinder (APC) and that adjusts the valve if a difference between the expected oxides of nitrogen level and the oxides of nitrogen level is not within a threshold.

More specifically, Geyer discloses an exhaust gas recirculation apparatus and method that determines a NO_x target based on a %LOAD (see Figure 6). The %LOAD is determined as a ratio between a maximum load at engine speed and an actual load at an engine speed. Therefore, Geyer fails to teach or suggest determining an expected oxides of nitrogen level based on a desired air per cylinder (APC). Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Each of claims 2 – 8 ultimately depend from claim 1, which defines over the prior art as discussed in detail above. Therefore, claims 2 – 8 also define over the prior art

for at least the reasons with regard to claim 1, and reconsideration and withdrawal of the rejections are respectfully requested.

Claim 17 has been amended to include calculating an expected NO_x level based on a desired air per cylinder (APC). As discussed in detail above with respect to claim 1, Geyer fails to teach or suggest calculating an expected NO_x level based on a desired air per cylinder (APC). Therefore, reconsideration and withdrawal of the rejection are respectfully requested.

Each of claims 18 – 21 ultimately depend from claim 17, which defines over the prior art as discussed in detail above. Therefore, claims 18 – 21 also define over the prior art for at least the reasons with regard to claim 17, and reconsideration and withdrawal of the rejections are respectfully requested.

Claims 1, 2, 17 and 19 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Schell (U.S. Pat. No. 6,615,646). This rejection is respectfully traversed.

As discussed in detail above, claim 1 has been amended to include a controller that determines an expected oxides of nitrogen level based on a desired air per cylinder (APC) and that adjusts the valve if a difference between the expected oxides of nitrogen level and the oxides of nitrogen level is not within a threshold. Schell fails to teach or suggest a controller that determines an expected oxides of nitrogen level based on a desired air per cylinder (APC) and that adjusts the valve if a difference between the expected oxides of nitrogen level and the oxides of nitrogen level is not within a threshold.

More specifically, Schell discloses measuring a rate of change of carbon dioxide in recirculated exhaust gas (see Abstract). Schell is silent as to determining an

expected oxides of nitrogen level and is further silent as to determining a difference between an expected oxides of nitrogen level and an oxides of nitrogen level. Therefore, reconsideration and withdrawal of the rejection are respectfully requested.

Claim 2 depends from claim 1, which defines over the prior art as discussed in detail above. Therefore, claim 2 also defines over the prior art for at least the reasons with regard to claim 1, and reconsideration and withdrawal of the rejection are respectfully requested.

Claim 17 has been amended to include calculating an expected NO_x level based on a desired air per cylinder (APC). As discussed in detail above with respect to claim 1, Schell fails to teach or suggest calculating an expected NO_x level based on a desired air per cylinder (APC). Therefore, reconsideration and withdrawal of the rejection are respectfully requested.

Claim 19 depends from claim 17, which defines over the prior art as discussed in detail above. Therefore, claim 19 also defines over the prior art for at least the reasons with regard to claim 17, and reconsideration and withdrawal of the rejection are respectfully requested.

Claims 1 – 8 and 17 – 21 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Mazur (U.S. Pat. No. 6,666,201). This rejection is respectfully traversed.

Claim 1 has been amended to include a controller that determines an expected oxides of nitrogen level based on a desired air per cylinder (APC) and that adjusts the valve if a difference between the expected oxides of nitrogen level and the oxides of nitrogen level is not within a threshold. Mazure fails to teach or suggest a controller that determines an expected oxides of nitrogen level based on a desired air per cylinder

(APC) and that adjusts the valve if a difference between the expected oxides of nitrogen level and the oxides of nitrogen level is not within a threshold.

More specifically, Mazur discloses a system and method for diagnosing EGR performance using a NOx sensor. A time rate of change in a measured NOx is compared to a predetermined, expected time rate of change in measured NOx and the condition of the EGR valve is determined based on the comparison (see Abstract). Mazur determines an expected NOx level based on engine load (Col. 6, Lines 28 – 30). Therefore, Mazur fails to teach or suggest determining an expected oxides of nitrogen level based on a desired APC, and reconsideration and withdrawal of the rejections are respectfully requested.

Each of claims 2 – 8 ultimately depend from claim 1, which defines over the prior art as discussed in detail above. Therefore, claims 2 – 8 also define over the prior art for at least the reasons with regard to claim 1, and reconsideration and withdrawal of the rejections are respectfully requested.

Claim 17 has been amended to include calculating an expected NOx level based on a desired air per cylinder (APC). As discussed in detail above with respect to claim 1, Mazur fails to teach or suggest calculating an expected NOx level based on a desired air per cylinder (APC). Therefore, reconsideration and withdrawal of the rejection are respectfully requested.

Each of claims 18 – 21 ultimately depend from claim 17, which defines over the prior art as discussed in detail above. Therefore, claims 18 – 21 also define over the prior art for at least the reasons with regard to claim 17, and reconsideration and withdrawal of the rejections are respectfully requested.

REJECTION UNDER 35 U.S.C. § 103

Claims 9, 10 and 14 – 16 stand rejected under 35 U.S.C. § 103(a) as being anticipated by Seki et al. (U.S. Pat. No. 5,060,604) in view of Schell (U.S. Pat. No. 6,615,646). This rejection is respectfully traversed.

Claims 9 has been amended to include a controller that determines an expected oxides of nitrogen level based on a desired air per cylinder (APC) and that adjusts the cam phaser if a difference between the expected oxides of nitrogen level and the oxides of nitrogen level is not within a threshold. Seki et al. fails to teach or suggest a controller that determines an expected oxides of nitrogen level based on a desired air per cylinder (APC) and that adjusts the cam phaser if a difference between the expected oxides of nitrogen level and the oxides of nitrogen level is not within a threshold.

More specifically, Seki et al. discloses a method of detecting failure of a valve timing change-over control system. Failure is detected by comparing a present value of an air-fuel ratio feedback correction coefficient with a predetermined value of the correction coefficient. Seki et al. is silent as to determining an expected oxides of nitrogen level based on a desired APC. Schell fails to cure the deficient teachings of Seki et al., as discussed in detail above. Therefore, reconsideration and withdrawal of the rejection are respectfully requested.

Each of claims 10 and 14 – 16 ultimately depend from claim 9, which defines over the prior art as discussed in detail above. Therefore, claims 10 and 14 – 16 also

define over the prior art for at least the reasons with regard to claim 9, and reconsideration and withdrawal of the rejections are respectfully requested.

ALLOWABLE SUBJECT MATTER

The Examiner has that claims 11 – 13 would be allowable if rewritten in independent form. Applicant has presently refrained from rewriting any of claims 11 – 13 in independent form in view of the discussion above.

OTHER CLAIM AMENDMENTS

Claims 4 and 12 have been amended herein for consistency with claims 1 and 9, respectively. No new matter has been entered.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (313) 665-4969.

Respectfully submitted,

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